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Adoption of Social Media as a Communication Medium: A Study of Theoretical Foundations

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ADOPTION OF SOCIAL MEDIA AS A COMMUNICATION MEDIUM: A STUDY OF THEORETICAL FOUNDATIONS

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Abstract

The continuing popularity and adoption of social media by the general public and the realisation of its potential customer engagement power by business, is highlighting the importance of social media to ongoing business activities and strategies. However, current research that is more focused around the potential power of social media generates little debate of the adoption factors driving public use of social media as a communication medium. Even though businesses have an opportunity to broaden their reach by adding social media to the communication strategic-mix, the dearth of informed discussions relating to theoretical underpinnings associated with the public adaptation of social media as a communication medium fails to clearly inform strategic business decisions regarding adoption decision-making. This research study conducted in the Australian context queries established theoretical frameworks by asking the question; what theoretical foundations do influence the social media adoption by the intended audience of communication?

Keywords: social media, adoption, communication technology, online survey, information systems theory.

1.0 Introduction

The public is increasingly turning to social media as an online communication medium. Consequently, businesses are identifying this as an opportunity to connect broadly with the general public and more directly with their customers in a cost-effective manner. However, the novelty aspect of social media as a communication medium belies the lack of actual knowledge around understanding the perceptions and drivers relating to the adoption of social media by the public as a communication medium. Thereby making decisions about the adoption factors of social media engagement decision-making difficult for businesses (Aula, 2010).

For businesses, this knowledge gap can adversely affect their information governance due to improper use of communication strategies. Therefore, it is an imperative that businesses understand and consider the factors that drive public adoption of social media, in order to engage in an effective and sustainable manner.

Existing research studies with regards to the adoption of social media, have largely focused on specific social media technologies (Foster *et al.*, 2010), organisations (Nah and Saxton, 2010), and factors for communicating with customers using social media (Abedin *et al.*, 2013). Also there are established theories on communication technology adoption that have been widely discussed in the academic literature (Lin, 2003), but their relevancy to the adoption of social media as a communication medium has hardly been discussed.

Therefore, the intent of this research study is to address this gap in the knowledge and seek to answer the research question: "Do established theoretical foundations have a validity when social media is adopted as a communication medium?"

To this end, a research study was undertaken utilising an online survey tool to gather feedback from social media users residing in Australia. The decision to use an online survey for data gathering purposes was driven by the premise of using a familiar and appropriate technique to gain access to social media users within the 'Web' environment. The research specifically focuses on the Australian public with the aim to elicit broader insights behind their decision making and perceptions to adopt and the use of social media by the public and businesses alike for communication purposes. To extend further, the online survey also sought to gather feedback relating to the research question: "What theoretical foundations influence the social media adoption by the intended audience of communication?" The findings broadly add to current research around practitioners' ways of measuring the value and impact of SM and to demonstrate an awareness of current practices of evaluating and measuring business value of SM.

This paper begins with a comprehensive review of existing research in relation to social media and technology adoption models to determine and indicate the gap in knowledge. It critiques existing technology adoption models for their relevancy to the adoption of social media as communication medium. This then informs and facilitates the formulation of hypotheses relating to adoption of social media by the public to communicate. Then the methodology section discusses the data gathering and descriptive analysis techniques used to derive findings. Finally, a discussion interprets these findings in relation to the research questions and identifies further discussions and research possibilities within the scope of this research undertaking.

2.0 Review of Literature

In terms of this research, the term **Social Media Technology** will identify a specific technology (e.g. Facebook) and is defined as a website that provides a space for interested users to make their presence and connect with others to engage in meaningful communications using functionalities inherent to each such website to create, share, and consume content. **Social Media** is broad term used to describe a grouping of individual social media technologies. **Social Media based Online Communities** are defined as online communities formed when a social media users participate in a businesses' presence on one or more social media technologies with aim of forming online relationships.

2.1. Adopting Social Media as a Communication Medium

Alongside the wide-acceptance of social media by the public, greater emphasis is being placed on businesses to use social media technologies as a gateway to enable public engagement through communication (Harrison *et al.*, 2014). Research has identified the business potential in establishing a social media presence to form social media based online communities to entice users to participate in them (Kane *et al.*, 2014) and stimulate engagement and communication. However, characteristics inherent to social media based online communities require their adopters to be adequately informed when considering relevant social media strategies.

Germonprez and Hovorka (2013) identified socio-technical process as one such unique characteristic that generated, inhibited, and designed by "content-contributing and content-consuming members" (*ibid*, p. 526). They suggest extending the relevant theory, methods and practices to broadening the research spectrum to encompass growing context of studies involving social media based online communities. Meanwhile, Van Dijck's (2013) research points to the complicated relationship between technological and social considerations illustrated by the various technologies and protocols that support the formation and maintenance of social media based online relationships. This finding indicates that social media adoption is beyond the bounds of solely the technological aspects of the process. Consequently, practices that motivate social media users' adoption of social media to engage with social media based online communities by forming relationships, must also be taken into consideration.

Similarly from a practitioner's perspective, to effectively put social media into practice, businesses are required to overcome numerous challenges. These include determining the business value of social media (Schaupp and Bélanger, 2013), overcoming technology issues (Farrell, 2010) and defining metrics (Peters *et al.*, 2013) that will effectively measure the overall success of any applied social media strategy.

Notwithstanding the public accessibility of social media as an inexpensive technology compared to contemporary communication technologies, business are required to negotiate adoption related issues to achieve broader business expectations. Culnan *et al.* (2010) in their industry based research identified that mindful adoption of social media was necessary for its successful implementation, including the importance of understanding the technologies, and how they should be leveraged.

Consequently, researchers propose that the adoption of social media should be informed utilising holistic strategic frameworks (Werder *et al.*, 2014), focused on organisational

adoption of social media (Treem and Leonardi, 2012), their integration with traditional information systems (Rees and Hopkins, 2009) or their relevancy for specific business processes (Mitic and Kapoulas, 2012).

There has been little or no previous research that focused on the adoption of social media as a communication medium, nor the theories that underpin communication in the context of social media based online communities. Therefore, to address this gap in knowledge, this study will focus on forming a holistic model to inform the adoption of social media as a communication medium. However, as a precursor to this, the following section will critique established technology adoption models and their variants with the aim of elaborating on their relevancy to social media as a communication medium.

2.2. Technology Adoption Models

There are a number of established theoretical frameworks around the subject of technology adoption and their applicability to the adoption of social media as a mediated communication technology, as follows.

2.2.1. Technology Adoption Model (TAM)

The Technology Adoption Model (TAM) introduced by Davis (1986) was adapted from the Theory of Reasoned Action (TRA), model widely studied within the sphere of social psychology (Davis *et al.*, 1989). This model was promoted on the basis of the increasing importance of information technology and information systems (IS) and the investments risks for businesses attached to IS (Venkatesh *et al.*, 2003). Later, with technology evolving and transforming towards becoming more user-centric and Internet enabled, TAM too has undergone transformations based upon the context of its use or application (Abril, 2007).

The application of TAM implies an availability of a controlled environment that social media does not offer meaning that the application of concepts such as ‘planned behaviour’ in an environment of content creation and consummation by end-users is unrealistic. This outlines the impracticality of applying TAM in its current form or through its variants to social media adoption.

2.2.2. Technology-Organization-Environment (TOE) Models

The Technology-Organisation-Environment (TOE) model was a result of web based technologies coming to the forefront in terms of their application that required deviation from TAM based models. The TOE model initially proposed by Tornatzky *et al.* (1990) argued that organisational innovation is influenced by the three factors within the model name. However, with the emerging forms of technologies supporting online interactions deeply enmeshed within the ‘social fabric’ of the interactions, the task of modelling their adoption became ever more complex. This created a necessity for a new perspective to determine factors that shape the adoption of contemporary communication mediums.

2.2.3. Social Influence Model of Technology Adoption

Vannoy and Palvia (2010) proposed a ‘social influence’ model of technology adoption that was formed using four constructs, namely: social computing action; social

computing consensus; social computing cooperation, and social computing authority. These constructs were antecedent to the adoption of social computing. However, this model was intended for applications such as peer-to-peer technologies and was still limited in terms of applying the broader societal scale technologies such as social media and therefore is of limited value in the context of social media adoption.

2.2.3. Integrated Communication Technology Adoption (ICTA) Model

Lin (2003) proposed the Integrated Communication Technology Adoption (ICTA) model as a research framework for integrating distinct communication research traditions, to study factors that assist in shaping adoption decisions of communication technologies addressing both user and organisational aspects. The model consisted of six groupings or factors with each consisting of established theoretical underpinnings relating to communication technology adoption. The ICTA model also covers a breadth of considerations relating to technology and social issues of the communication and therefore can be considered as having a greater relevancy to research involving complex socio-technology aspects, such as social media.

The following section outlines the six factors to determine their applicability to social media adoption. This discussion of the ICTA Model components expands into the specific theoretical underpinnings to determine the relevancy to social media, leading to their selection or non-selection in the subsequent research study.

2.2.3.1. Use Factors

Lin (2003) identifies Use Factors as those that are driven by users' needing to achieve specific outcomes and group together theoretical underpinnings, such as communication flow, expectancy value and uses, and gratification theories.

Communication flow as explained by Trevino and Webster (1992) includes a perceived sense of control, attentiveness, curiosity, and interestedness that users experience through their interaction with the technology that can influence how the audience evaluates a technology. **Expectancy Value Theory** as described by LaRose and Atkin (2009) as those technology adopters who are likely to develop positive attitudes towards the technology concerned, if the they are able to be convinced of the ability of the technology to improve their communication efficiency. For example easiness of use, while avoiding potential negative connotations such as adverse privacy or security issues of the same. **Uses and Gratifications Theory** as explained by Ruggiero (2000) emphasises how and why people use computer-mediated communication and how it can be further mediated through the audience's gratification with their technology use experience.

In the context of using social media as the communication medium, users do expect outcomes, such as communication efficiency (Laroche *et al.*, 2012), especially considering the easier access to the medium through mobile technologies. In this context Use Factors can be considered in this research discussion.

2.2.3.2. Audience Factors

Lin (2003) identifies audience factors as a grouping of theoretical underpinnings that drive adoption through users' particular personal characteristics. These include theories of innovativeness, self-efficacy and reasoned action.

Innovativeness as explained by Lin (2003) includes **Innovative attributes** that makes some users are more open to experience than others (Nov and Ye, 2008) and **Innovativeness** need makes users' openness to experience and a result of curiosity and novelty-seeking tendencies (Correa *et al.*, 2010). **Self-Efficacy Theory** determines the way in which people make judgments concerning the applicability of their perceived abilities to confront situations deriving from various circumstances associated with the technology they contemplate adopting (Davis, 1989). **Theory of Reasoned Action (TRA)** stems from beliefs, evaluations and the motivations that drive behavioural intention leading to actual behaviour and is widely discussed alongside TAM discussed earlier (Chuttur, 2009).

Audience factors as a whole are important in identifying insightful information relating to actions of the public driven by their individual capabilities and self-confidence in self-evaluating innovative technologies for their own benefit. Therefore, in the context of this research that is based on rapidly evolving social media environment, audience factors are imperative in this discussion as a social communication aspect.

2.2.3.3. Social Factors

Lin (2003) considered the theoretical underpinnings that drives adoption by particular users' need to interact, share or collaborate as social factors. This indicates the effect that social networks and the position of the adopter in social networks as important determinants of adoption (Pedersen, 2005). The grouping also includes theories associated with opinion leadership, critical mass and social symbolism.

Opinion Leadership, according to Lin (2003) relates to adoption decision-making by opinion followers driven by influencers that they consider within their social networks. With regard to digital networks, opinion leadership closely associates with two-step-flow theory where ideas flow from mass media opinion leaders (Park, 2013). **Media Symbolism** as Lin (2003) describes is when adoption of a communication medium conveys a symbolic gesture to others and thereby making the medium part of the message itself. **Critical Mass i**n relation to adoption decision-making can be interpreted as making use of efficiencies resulting in having a larger number of other adopters.

Considering the importance of the diffusion of information that is valued in social media it is imperative to consider social factors as a factor in this study.

2.2.4.4. System Factors

System factors as described by Lin (2003) are based on systems theory and the drive behind the organisational internal decision-making environment relating to the adoption of a communication technology. They cover regulation/policy, technological culture, industry trends, and market/competition.

2.2.4.5. Adoption Factors

Adoption factors too, can be considered as being associated with the businesses' internal decision-making environment. Its components have been identified as non-adoption, discontinuance, likely adoption, adoption, and re-invention. They are primarily decisions resulting through system factors (Lin, 2003).

2.2.4.6. Technology Factors

According to Lin (2003) description, technology factors are explained by theoretical underpinnings, such as innovative attributes, social presence, media richness, and technology fluidity. They also relate to businesses' internal decision-making associated with the selection of a particular communication technology.

2.4.6. Contextual Factors

The contextual factors have not been identified in the Lin (2003) research but are considered in the exploratory research conducted by Senadheera *et al.* (2011) that monitored Australian banks' social media presence on MySpace, Facebook, Twitter, and YouTube. This study observed a rise in social media user participation with Australian banks' social media online communities during times of banking services outages on technology platforms. The communications that occur during situational crises (Coombs, 2007), such as Internet banking and automated teller machines (ATM's) outages can be considered under this category.

From the six factors identified in the Lin (2003) research it is possible to segregate them in two distinct categories. They are, 1) a category that includes factors that are distinctly aligned with internal decision-making relating to communication technology adoption (system and adoption factors), and 2) a category that explains the outcome of technology audience' adoption decisions (use, audience, and social factors). In this sense, even though technology factors seem more aligned with the internal decision-making, they can be presented as interim factors that interface between the two categories (see Figure 1).

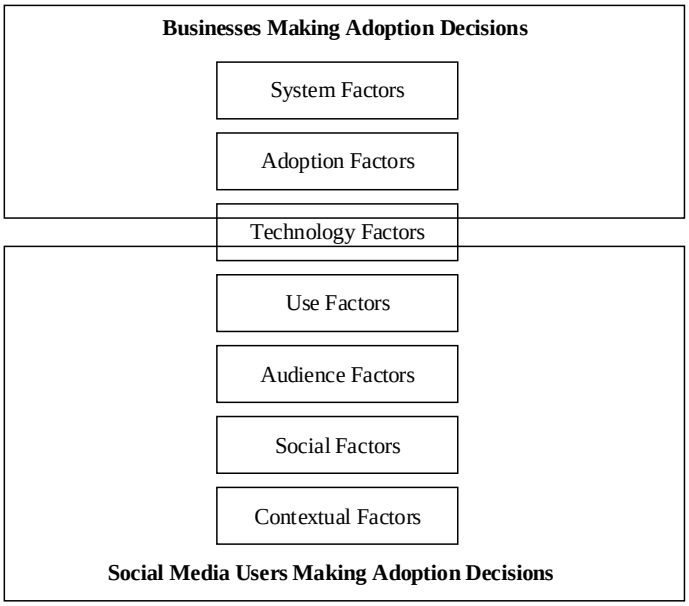

Figure 1. How Adoption Factors Affect Social Media Adoption Decision-Making

However, the exploratory research study in this paper will focus on the four factors, namely: use; audience; social, and contextual factors. Each group of which consists of the established theoretical foundations as described previously and identified in the lower section of Figure 1. They predominantly explain the intended technology audience's adoption decisions and affect the overall effectiveness of business decisions

relating to adoption of social media as a communication medium. Based on this outcome, the following hypotheses have been formulated:

H_{01} – Use Factors positively influence user adoption of social media to communicate;

H_{02} – Audience Factors positively influence user adoption of social media to communicate;

H_{03} – Social Factors positively influence user adoption of social media to communicate;

H_{04} – Contextual Factors positively influence user adoption of social media to communicate.

These hypotheses are depicted in Figure 2 illustrating the proposed model for determining the factors that are important in social media adoption by the Australian public to communicate.

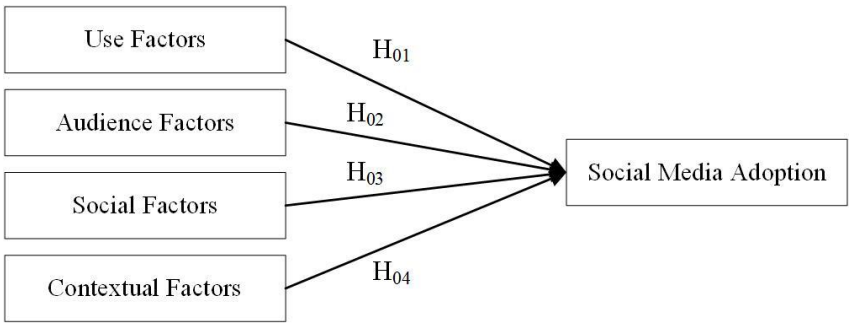

Figure 2. Proposed Model for Adopting Social Media as a Communication Medium

The following section will explain in detail research approach taken and the data collection techniques used to capture relevant data.

3.0 Methodology

An online survey of Australian social media users was conducted notwithstanding methodological issues associated with the technique, such as self-selection or lack of control over testing conditions (Gosling *et al.*, 2004). It was given preference over others as it provides higher probability of getting access to Internet using population in which social media users forms a subgroup and that issues such as self-selection are no more troublesome than in mail or telephone surveys (Matsuo *et al.*, 2004).

3.1 Questionnaire

The online survey questionnaire items were adapted from the related literature discussed in section 2.3 and modified to suit this study and expressed in non-technical, nomenclatural language to enable a common contextual understanding by the majority of participants. The survey questionnaire was segregated into four distinctive sections that grouped together 1) probing questions to determine participant eligibility, 2) self-descriptive attitudinal statements based on established theoretical underpinnings, 3) self-descriptive statements that reflected contextual factors, and 4) categorical

questions used to capture participant demographic information relating to gender, age group, occupation, and income range.

3.2. Scale Selection

Five-point Likert-type scales were used for self-descriptive attitudinal statements taking into consideration meeting the balance between web-respondent time pressures and reasonable reliability and validity indices. Likert-type scales are commonly used in social sciences as an indicator and assessment of attitudes (Gliem and Gliem, 2003) with past research being conducted with number of response categories ranging from form two to eleven indicating different scales for different purposes (Preston and Colman, 2000).

3.3. Web-based Survey Tool Selection/Survey Distribution

The survey questionnaire was designed using Qualtrics, an online survey hosting and analysis software. Apart from easiness of its use (Yarkoni, 2012), Qualtrics enabled overcoming inherent issues associated with online surveys, such as multiple submission by limiting responses stemming from a given Internet Protocol (IP) address. It also permitted the researchers to exercise control over the flow of the survey and the testing environment. Qualtrics software functionalities also facilitated the respondents to manoeuvre back and forth of the survey questions to facilitate greater flexibility in providing most appropriate responses. The web link to the online survey was distributed using online tools, such as social media and university learning management systems and via traditional communications using email and direct mail to reach the intended audience of Australian social media users.

3.4. Analysis

Principal Component Analysis (PCA) was used to determine variables that account for most of the variance in the original variables. PCA is widely used in research associated with social networking/media (Venkatesh and Davis, 2000, Ross *et al.*, 2009). Considering the exploratory nature of this study a testing of a model was not considered and therefore PCA was given precedence over other forms of factor analysis.

4.0 Results

Results obtained through three distinctive analyses undertaken on the online survey data are presented in sections 4.1 – 4.3.

4.1. Descriptive Statistics

The results of sample statistics and principal component analyses are provided here.

Characteristic	**Descriptive Statistics**
Gender	60.54 (Female); 38.7% (Male)
Age	22.2% (18-25); 25.7% (26-34); 22.2% (35-44); 16.9% (45-54); 8.5% (55-64)

Income Range, AU$	20.7% (Below 20,000); 33.3% (20,000-49,999; 19.6% (50,000-79,999); 8.8% (80,000-99,999); 10% (Above 100,000)

Table 1. Sample Statistics for participant demographics

The respondent demographics were evenly distributed except for a higher number of female respondents with nearly half the respondents belonging to the 18-34 age group (47.7%).

4.2. Principal Component Analysis (PCA)

In this Principal Component Analysis (PCA) 'direct oblimin' rotation was used (Brown, 2009) with 'forced factor extraction' to reflect the number of factors identified in the conceptual model component governing social communication aspects. Having established the potential behaviour of the variables considering their correlations, further iterations were conducted using Verimax rotation while conducting the extraction based on Eigenvalue greater than 1. Also, correlation coefficients with an absolute value of less than .4 were suppressed (Brown, 2009). In the following 5 iterations, 5 variables were removed from the analysis owing to them generating complex structures (when a variable has high loading, .4 or greater on more than one component) or for returning a value of less than .5 in communalities. A sixth variable was later removed after conducting the initial validation using split-sample analysis. In the final solution, the four components extracted explain 74.186% of the total variance. Therefore, it is above the range where cumulative proportion of variance criteria that need to be met with four components to explain 60% or more of the total variance. The components extracted and associated variables are presented in Table 2.

Three variables that load highly on the first component do relate to outcomes social media users expecting to achieve by using social media. Therefore this component will be labelled as **Expectancy Value.** As per the ICTA model (Lin, 2003) classification of theoretical underpinnings governing adoption of communication medium, this component will be included under the broad category name - **Use Factor.** Use factors encompass theoretical underpinnings driven by the users' need to achieve a specific outcome, i.e. find information.

The second component contains two variables that loads highly onto it and they both seem to relate to people's behavioural aspects relating to real, implied, or imagined presence of actions of other individuals, in an online social setting. The relates to social impact theory advocated by Latane (1981). Hence, this component will be labelled as **Social Impact.** This theme however, was not specifically identified in the discussion relating to the ICTA model components discussed in Lin (2003) that primarily focused on the adoption of mediated communication technologies in an organisational setting. However, considering the closeness of the items identified in the component to 'socialisation', this component will be included under **Social Factors** driving adoption of social media as a medium of communication.

	Component			
	1	2	3	4
["Social media allows me to improve communication efficiency since it saves me time/money]	.849			

["Social media allows me to improve my communication efficiency by providing uninterrupted access]	.833			
["Social media gives me the feeling of having control over the flow of my communications]	.765			
["Social Media allows me to get attention of other users]		.871		
["Social media is a status symbol for me]		.830		
["I have the knowledge and skills required to use social media"]			.850	
["I am confident of overcoming any technology issues associated with using social media"]			.833	
["If I find out about problem(s) with my day-to-day banking, I will get in touch with the bank as a concerned customer using social media"]				.866
["If I find out about problem(s) with my day-to-day banking, I will get in touch with my friends, colleagues or relatives using social media"]				.831

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.[a]
a. Rotation converged in 5 iterations.

Table 2: Extracted Components that explain Factors Influencing Social Media Adoption

With regard to the third component, the two variables that loads highly onto it relate to users' belief about their ability to succeed when social media is used as a communication medium. Hence, this component is named as **Self-efficacy.** As per the ICTA model (Lin, 2003) this component can be identified under the broad category name - **Audience Factor.** In Lin (2003) audience factors have been identified as a grouping of theoretical underpinnings that govern the adoption of a communication medium driven by users' personal characteristic.

Finally, the two variables that loads highly onto the fourth component can be associated with specific situations relating to issues associated with their day-to-day banking when social media was considered as a communication medium. Therefore, this component is identified under the broad category called **Contextual Factors.** As per the discussion in section 3.4.3, the fourth component relating to contextual factors has been identified as **Situational Crisis Communication** considering its reflection on the adoption of social media by users during times of banks facing problems with their customer facing technologies.

The research findings derived from the analysis of the online survey data confirm the appropriateness of the groupings of established theoretical foundations identified in the ICTA Model components based on their applicability to social media as a medium of communication. They have adequately captured the complex communication environment discussed in section 2.3 that makes social media fundamentally different to traditional communication mediums.

The following sections will explain validity and reliability measures undertaken that explain the generalisability of tests.

4.1.1. Content Validity

The following actions were taken to maintain the content validity of the constructs when formulating the questions of the survey-questionnaire.

Firstly, the constructs used were formulated based on the research studies relating to user participation in social networks (Foster *et al.*, 2010), adoption of social media for public relations in not-for-profit organisations (Curtis *et al.*, 2010), and choosing the appropriate analytical approach (Brown, 2009). Secondly, the survey questionnaire item (question) was given to an expert for detailed analysis. The expert opinion provided was focused various aspects of the questions, including their essentiality, usefulness, and relevancy in measuring respective constructs under study. Finally, a pilot was conducted by making the survey questionnaire available online to a panel consisting of teaching and research staff attached to the school of information and business analytics. Their feedback was used to make changes to wordings used in questions in order to make them more understandable to the general public.

4.1.2. Sampling Adequacy

A sample size of 213 was identified based on their self-reporting as being social media users from a total of 261 respondents. Sampling adequacy has been met for 15 variables that returned anti-image correlation values of above 0.5 on the first iteration, thereby supporting their retention in the analysis. Also, the study has met the sample size to produce a results that carries higher reliability. Literature suggests a multiple of the number of variables with 5-10 cases per variable (Field, 2013). For KMO measure conducted to determine availability of adequate amount of data has returned an adequate value of 0.681.

4.1.3. Internal consistency

The four components extracted have returned Cronbah's Alpha coefficient values of 0.786, 0.662, 0.627, and 0.638 respectively and majority of them in the greater scheme of events can considered questionable. However, considering the exploratory nature of this study and the possibility of using extracted factors as the basis to undertake further research using qualitative measures, such as focus groups, these values can be considered acceptable.

4.1.4. Test of Generalisability

The 'test of generalizability' of the findings based on principal component analysis was carried out by conducting a second research study on the same data set to determine whether they greatly deviate from the initial findings. In this regard, 'split-half method" as advised by Field and Hole (2003, p.48) as the "simplest statistical technique" was used. Here, the data set was randomly split in to two to conduct the analysis on each half. The intention was to simulate a condition to represent a study and a replication. Having undertaken comparing of communalities and factors loadings on split-cases, it demonstrated part fulfilment of evidence that the findings are generalizable and valid.

These findings lead to questions of whether there are any factors that drive differences among different demographics, such as gender or age groups. The aim of this section is to expand this discussion around these factors by conducting a descriptive analysis to unearth those factors that drive differences. A similar analysis was previously conducted by Correa *et al.* (2010) who examined the role played by gender and age in the dynamics of the social media use. In that, they studied groups' relationship to the three of the five dimensions of the *Big-Five model* proposed by Goldberg (1990).

4.3. Testing Opinion Differences (Gender/Age Group)

The Mann-Whitney U test will be conducted with these four factors as dependent variables to determine whether attitude towards them differ based on gender/age-group identified here as predictors. Mann-Whitney U test is commonly used for testing differences between groups and it looks for differences in ranked positions of scores in the two groups (Field and Hole, 2003). In this regard, four hypotheses were formulated.

> $H_{0U:}$ Expectancy values (a use factor) driving the adoption of social media is the same across categories (gender and age groups);
>
> H_{0A}: Self-Efficacy (an Audience Factor) driving the adoption of social media is the same across categories (gender and age groups);
>
> H_{0S}: Social Impact (a social factor) driving the adoption of social media is the same across categories (gender and age groups);
>
> H_{0C}: Contextual Factors driving the adoption of social media is the same across categories (gender and age groups).

In determining age groups for this study, the Millennial Generation with birth years from 1982 – 2002 were given specific consideration for their inclination to integrate user-generated content creating sources to their life-styles (Sago, 2010). With the adult population belonging to this group are now 18-30+ years old, to gain greater spread of information relating to their social media adoption tendencies, the test was conducted on two pairs of age groups, 18-25 years and older as well as 18-34 years and older.

4.3.1. Use Factors

The Mann-Whitney U test was run to determine if there were differences in expectancy value score between males and females. Distributions of the expectancy value scores for males and females were not similar as assessed by visual inspection. Expectancy value scores for males (mean rank = 105.12) and females (mean rank = 104.12) were not statistically significantly different, $U = 5{,}046.5$, $z = -0.116$, $p = 0.907$. However, the test that was run to determine if there were differences in expectancy value score between younger (aged 25 or younger) and those over 25 years old did return a statistically significant result that resulted in the rejection of the null-hypothesis. Expectancy value scores for younger people (mean rank 128.98) were statistically significantly higher than for older people (mean rank 95.70).

4.3.2. Audience Factors

The analysis result has demonstrated differences in self-efficacy score between males and females as distributions of scores for males and females deemed similar, as assessed by visual inspection. However, engagement scores for males (mean rank = 117.02) were statistically significantly higher than for females (mean rank = 96.83), $U = 4{,}106.5$, $z = -2.348$, $p = 0.019$. The null-hypothesis was rejected.

When self-efficacy scores between younger (aged 25 or younger) and older generations were determined, the results also did return a statistically significant result resulting in the rejection of the null-hypothesis. Self-efficacy scores for younger people (mean rank 124.89) were statistically significantly higher than for older people (mean rank 97.17). Here again, when visual inspection was conducted, distributions of the expectancy value scores for younger and older people turned out to be dissimilar. U=3,086.0, z=-

2.929, and p < 0.003. The test that was run to determine if there were differences in self-efficacy score between younger (aged 34 or younger) and older people. Distributions of the self-efficacy scores for younger and older people were not similar, as assessed by visual inspection. Self-efficacy scores for younger (mean rank = 117.53) were statistically significantly higher than older (mean rank = 88.07) people. *U* = 4,890.5, *z* = -1.033, *p* = 0.301. The null-hypothesis thus was rejected.

4.3.3. Social Factors

Distributions of the social impact scores for males and females were not similar, as assessed by visual inspection. Social impact scores for males (mean rank = 109.56) and females (mean rank = 101.40) were not statistically significantly different, *U* = 4,495.5, *z* = -0.949, *p* = 0.342.

The test that was run to determine if there were differences in social impact score between younger (aged 25 or younger) and older people did not return a statistically significant result. Social impact scores for younger people (mean rank 109.18) and older people (mean rank 102.82) were not statistically significantly different. Here again, when visual inspection was conducted, distributions of the expectancy value scores for younger and older people turned out to be dissimilar. U=3,950.0, z=-0.673, and p = 0.501.

A Mann-Whitney U test was also run to determine if there were differences in social impact score between younger (aged 34 or younger) and older people. Distributions of the social impact scores for younger and older people were not similar, as assessed by visual inspection. Social impact scores for younger (mean rank = 108.29) and older (mean rank = 99.72) people were not statistically significantly different, *U* = 4,896.5, *z* = -1.019, *p* = 0.308.

4.3.4. Contextual Factors

Distributions of the expectancy value scores for males and females were not similar, as assessed by visual inspection. Situational Crisis Communication scores for males (mean rank = 107.74) and females (mean rank = 102.52) were not statistically significantly different, *U* = 4,839.5, *z* = -0.608, *p* = 0.543.

The test that was run to determine any differences in contextual factor score between younger (aged 25 or younger) and older people, distributions of the expectancy value scores for younger and older people were not similar, as assessed by visual inspection. Situational Crisis Communication scores for younger people (mean rank 96.49) and older people (mean rank = 107.38) were not statistically significantly different. When the visual inspection was conducted, distributions of the expectancy value scores for younger and older people turned out to be dissimilar. U=4,648.0, z= 1.151, and p = 0.250. However, the test that was run to determine if there were differences in Situational Crisis Communication score between younger (aged 34 or younger) and older people did return a statistically significant result resulting in the rejection of the null-hypothesis. Distributions of the expectancy value scores for younger and older people were not similar, as assessed by visual inspection. Situational Crisis Communication scores for younger (mean rank = 116.00) were statistically significantly higher than for older (mean rank = 92.00) people. *U* = 6,499.5, *z* = 2.699, *p* = 0.007.

5.0 Discussion

The analysis findings indicate, it was possible to observe certain themes that drive differences, varies among different demographic groups.

Findings of the Mann-Whitley U tests highlight that four themes, underpinned by components with established theoretical frameworks do not drive considerable differences amongst gender groups. However, based on the information presented post-analysis identify age as a major contributor in the creation of differences.

The social media adoption factors that did not generate any difference between the three demography categories was the social impact where test results have determined that they were same across all demographic categories. Alternatively, self-efficacy was found to be a factor that drives most of the differences within all three demography categories. Interestingly, differences in three of the four adoption factors were observed when Millennial Generation was segregated into those belonging to 18-25/older and 18-34/older. This has highlighted how age affects social media adoption decision-making amongst population. These differences have highlighted a need for developing a deeper understanding of the phenomena that drive such differences. In effect, they do provide further compelling reasons to consider in the discussions associated with the model presented in figure 2.

With regard to the overall research study, these findings do create theoretical implications that can be used to inform future research.

Firstly, these findings have developed a necessity to consider the importance of obtaining more insightful views relating to attitudes of different demographics towards their social media adoption. While descriptive analysis findings can be used in the design of relevant research, they can also be considered in determining appropriate theoretical sampling, thereby assisting with the subsequent research phases. This approach to theoretical sampling would inform the researcher's developing understanding of the area of investigation as often used in the grounded theory research towards developing further theories (Glaser, 1992). Furthermore, Breckenridge and Jones (2009) consider theoretical sampling as "pivotal" in building theoretical insights.

According to Glaser and Strauss (2009) theoretical sampling is defined as:

> "… the process of data collection for generating theory whereby the analyst jointly collects, codes, and analyses his data and decides what data to collect next and where to find them, in order to develop his theory as emerges (Glaser and Strauss, 2009, p.45)

The underlying issue here is that such an approach would enable the researcher to collect insightful data from people who can provide the most appropriate and relevant data for the generation of his or her theory.

From the practitioner's perspective, the ensuing discussion has the potential to positively impact upon businesses. For example, Australian banks being described through the lenses of a specific segment of the Australian population. The result being,

Australian banks are more likely to target this demographic segment in order to have greater impact form their social media presence.

Secondly, these findings relating to broader social media adoption can inform the subsequent discussion relating to using social media to communicate with, for example Australian banks. This is considering adoption of social media is a precursor to using it as a medium to communicate. The themes identified in this quantitative study that can be associated with established theoretical underpinning would provide a solid foundation in the creation of categories, based upon which focus groups analysis could be conducted.

It must also be noted that there are broader implications for these findings from practitioners' perspective, particularly for those businesses that are interested in driving innovation to strengthen customer relationships. In this regard, practitioners are provided with findings of empirical research based upon which they will be able to identify a specific demographic segment of the online community where their social media based messages should be targeted towards. If we are to take the example of Australian banks again, there is an inclination of Australian banks to focus their attention on the younger generation in the 18-34 age group (Foscht *et al.*, 2009) as a grow sector and the findings of this study can be explored further to facilitate more comprehensive understanding.

As research into the use of social media to communicate with the general public increases, an understanding of the adoption factors that drive such communication can potentially be exploited by a wide range of organisations. This includes, business, government and non-governmental organisations.

6.0 Conclusion

The outcome of the online survey has in general terms confirmed the appropriateness of selecting the four factors in the conceptual model, namely: use; audience; social, and contextual factors.

The results confirming certain adoption factors driving differences among certain demographics that other will have greater implications on the focus group design. Based on the observations made in regards to certain adoption factors are more sensitive towards the age groups rather than gender, participant age will be a major factor in deciding the subsequent focus group composition.

These outcomes have both theoretical and practical implications. From a theoretical perspective this research study has provided a basis for continuation of the discussion grounded on the established theories long associated with communication technology adoption. The implications for practitioners are associated with the possibility of using these adoption factors to inform multi-faceted considerations business need to focus their attention on when formulating social media strategies.

Apart from these outcomes, this study has opened up potential future research opportunities. Firstly, each of the groupings of theoretical underpinnings identified here as adoption factors can be studied separately to determine the effects of each of the theoretical underpinnings. Secondly, the factors identified in this study can be used as themes if researchers are to undertake further validation of the adoption model

presented by undertaking qualitative studies involving users to capture more insightful aspects of adoption.

One limitation of this research study is that the online survey was conducted with a sample of Australian social media users. Further research is encouraged using samples from a different geographical context. Future research can also be conducted by focusing on individual theoretical underpinnings rather than their groupings to further elaborate on their relevancy to social media adoption by the public for communication purposes.

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